

Serial No. 09/421,434
May 23, 2002
Page 3

REMARKS

Claims 1 and 3-20 are pending in this application. By this Amendment, Applicant amends claims 1 and 14, and cancels claim 2.

Claims 1-13 and 16 were rejected under 35 U.S.C. § 112, second paragraph for allegedly being indefinite. Claims 1 and 16 have been amended to correct the informalities noted by the Examiner, and claim 2 has been canceled. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 1-3 and 10-17 were rejected under 35 U.S.C. Section 102(b) as being anticipated by Saitoh et al. (U.S. 5,295,487). And, claims 1-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over IEEE Publication to Kawamura et al. in view of Allen et al. (U.S. 5,701,645). Applicant respectfully traverses these rejections.

Claim 1 has been amended to recite:

"A method for manufacturing and screening a piezoelectric transformer apparatus including an actuator and a generator, the method comprising the steps of:

beginning manufacturing of the piezoelectric transformer apparatus;

connecting a load impedance to said generator;

applying a stress signal to said actuator to vibrate the piezoelectric transformer apparatus;

identifying whether the transformer apparatus has a mechanical latent defect; and

completing the manufacture of the piezoelectric transformer apparatus after the step of identifying whether the transformer apparatus has the mechanical latent defect." (Emphasis added)

Claim 14 recites similar method steps for manufacturing a piezoelectric transformer apparatus.

The Examiner alleged that Saitoh teaches all of the method steps recited in claims 1 and 14 of the present application including beginning manufacturing of the transformer apparatus by dicing or bonding; connecting a load impedance to a generator; identifying whether the transformer apparatus has a mechanical defect; and completing manufacturing of the transformer apparatus by assembling each of the transformer apparatuses in a medical diagnostic apparatus. Applicant respectfully

Serial No. 09/421,434
May 23, 2002
Page 4

disagrees.

X { In contrast to the present invention and the Examiner's allegations, Saitoh teaches an impedance detecting circuit 24, **NOT** providing a load impedance. The impedance detecting circuit 24 of Saitoh merely detects an impedance change related to the relative dielectric constant of the ultrasonic probe 21. Thus, the impedance detecting circuit 24 of Saitoh is used for detecting an impedance change, and clearly does not provide a load impedance as recited in the present claimed invention. Therefore, Applicants respectfully submit that Saitoh clearly fails to teach or suggest the step of "connecting a load impedance to said generator".

7 { In addition, contrary to the Examiner's allegation, in Saitoh, the testing for defects is performed after the manufacturing of the transformer apparatus has been completed. In fact, in col. 20, lines 44-55, Saitoh clearly discloses that "each of the **obtained array-type ultrasonic probes** was subjected to the actual operation tests of 1000 hours and 30000 hours" (emphasis added). This disclosure in Saitoh clearly indicates that the tests for defects are performed after the array-type ultrasonic probes are completely manufactured, **NOT** before the completion thereof as recited in claims 1 and 14 of the present application.

The Examiner alleged that, in Saitoh, "assembling each of the transformer apparatuses is a medical diagnosing apparatus" constitutes "completing manufacturing of the transformer apparatus". This is clearly incorrect because the transformer apparatuses must be completely manufactured before the transformer apparatuses can be assembled in the medical diagnosing apparatus.

Accordingly, Applicant respectfully submits that Saitoh clearly fails to teach or suggest the unique combination and arrangement of elements recited in claims 1 and 14 of the present application.

The Examiner alleged that Kawamura teaches each of the method steps recited in claims 1 and 14, except for the step of testing after the beginning of manufacturing and before the completing of manufacturing of a transformer apparatus. However, the Examiner alleged that Allen teaches "a piezoelectric transformer manufacturing process in which the process begins with manufacturing multiple transform r apparatus and

Serial No. 09/421,434
May 23, 2002
Page 5

ends with completing the transformer apparatuses by either packaging each transformer apparatus or incorporating each transformer apparatus into other electronic assemblies. In between the steps of beginning and completion of the transformer apparatuses, Allen teaches testing the transformer apparatuses to identify any defective transformer apparatus". Applicant respectfully disagrees.

X (In contrast to the Examiner's allegation, Kawamura teaches that the change in resistance of the element is measured with the bridge box, and clearly fails to teach or suggest the step of "connecting a load impedance to said generator". The Examiner refers to Fig. 5 of Kawamura as teaching a load impedance connected to a generator, however, no such load impedance is illustrated in Fig. 5 of Kawamura. Thus, Applicant respectfully submits that Kawamura fails to teach or suggest the step of "connecting a load impedance to said generator".

Contrary to the Examiner's allegation, Allen teaches that after the manufacturing of the SAW devices is completed, "individual die 10 are then packaged and tested, including electrical tests, prior to shipping and/or incorporating into electronic assemblies such as radios" (col. 4, lines 28-35). Shipping the SAW devices and/or incorporating the SAW devices into electronic assemblies clearly cannot be fairly construed as part of the manufacturing process thereof. In contrast, Allen clearly teaches that the testing for defects is performed after completion of the manufacturing of the SAW devices. Thus, Applicants respectfully submit that Allen clearly fails to teach or suggest testing a piezoelectric transformer in between beginning manufacturing and completing manufacturing of the piezoelectric transformer apparatus as recited in the present claimed invention.

In view of the foregoing Amendments and Remarks, Applicant respectfully submits that Claims 1 and 14 are allowable over the prior art for the reasons described above. Claims 3-13 and 15-20 are dependent upon claims 1 and 14, respectively, and are therefore allowable for at least the reasons that claims 1 and 14 are allowable.

In view of the foregoing Amendments and Remarks, Applicant respectfully submits that this Application is in condition for allowance. Favorable consideration and prompt allowance are respectfully solicited.

Serial No. 09/421,434
May 23, 2002
Page 6

To the extent necessary, Applicant petitions the Commissioner for a Three-month extension of time, extending to May 27, 2002, the period for response to the Office Action dated November 27, 2001.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

Date: May 23, 2002


Attorneys for Applicant

Joseph R. Keating
Registration No. 37,368

Christopher A. Bennett
Registration No. 46,710

KEATING & BENNETT LLP
10400 Eaton Place, Suite 312
Fairfax, VA 22030
Telephone: (703) 385-5200
Facsimile: (703) 385-5080

RECEIVED
MAY 23 2002
TECHNOLOGY CENTER R3700

Serial No. 09/421,434
May 23, 2002
Page 7

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. A method for manufacturing and screening a piezoelectric transformer apparatus including an actuator and a generator, the method comprising the steps of:
beginning manufacturing of the piezoelectric transformer apparatus;
connecting a load impedance to said generator;
applying a stress signal to said actuator to vibrate the piezoelectric transformer apparatus;
identifying whether the transformer apparatus has a mechanical latent defect;
and
completing the manufacture of the piezoelectric transformer apparatus after the step of identifying whether the transformer apparatus has [a] the mechanical latent defect.

16. The method according to Claim 15, further comprising the step of identifying whether the piezoelectric transformer apparatus has [a] the mechanical latent defect after said steps of connecting a load impedance to said generator and applying a stress signal to said actuator to vibrate the piezoelectric transformer apparatus.